Brief on Appeal to the Board

Docket No.: **CP-5144US2**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

David A. Giardino

Serial No.: **10/772,739**

Filed: **May 10, 2004**

For: **MODULAR CONTROL APPARATUS FOR A POWER IMPACT TOOL**

Group Art Unit: **3721**

Examiner: **CHUKWURAH, NATHANIEL C**

Real Party of Interest

The real party of interest in the above mentioned application is Chicago Pneumatics that has been assigned 100% of the rights in the invention from the inventor.

Related Appeals and Interferences

There are no related appeals or interferences to this application.

Status of Claims

Claims 56-61 and 70-73 are finally rejected and are the subject of this appeal and claims 62-64 and 67 are withdrawn from consideration. No other claims are pending.

Status of Amendments

No after final amendment has been filed. All amendments filed have been considered and are included in the appealed claims.

Summary of Claimed Subject Matter

The first embodiment is a method of using a modular control apparatus recited in claim 56 according to the present invention is best depicted and exemplified in Figures 1-3.

The second embodiment of the present invention is recited in claim 60 that is depicted and exemplified in Figures 1-3.

The third embodiment of the present invention recited in claim 70 is depicted and exemplified in Figures 1-3.

The method according to the present invention is exemplified in claim 56 which recites providing a modular control apparatus 600 having a valve 100 in fluid communication with a tool 11, wherein said apparatus is configured to shut off air flow to the tool 11 after a selected time that torque is being applied by the tool 11 (see, e.g., pages 6-22 of the instant specification for detailed description of structure embodied in the claims). The aligning of the modular control apparatus 600 to the tool 11 and attaching the modular control apparatus 600 to the tool 11 is exemplified in FIGs 1 and 2. The adjusting of the flow restriction with the valve 306 to control the output of the modular control apparatus 600 is exemplified in FIG 2.

Independent claim 60 is directed toward a second embodiment of the invention as supported by pages 6-22 of the instant specification. In summary, the method of using a pneumatic modular control apparatus 600 comprising the steps of attaching the pneumatic modular control apparatus 600 to a pneumatic tool 11, wherein said modular apparatus 600 includes a device 300 having a valve 82 in fluid communication with the tool 11, wherein the device 300 is configured to shut off air flow to a motor 14 of the tool 11 in response to a selected time that torque has been applied by the tool 11 has been reached (see, e.g., pages 6-22 of the instant specification for detailed description of structure embodied in the claims). The method of connecting a compressed-air supply channel to an input port of the pneumatic modular control apparatus and channeling a compressed-air discharge from a discharge port of the pneumatic modular control apparatus to the inlet of a pneumatic motor of the pneumatic tool are exemplified in FIG. 1. The method of adjusting the flow rate of a valve by setting a valve position to control the pneumatic modular control apparatus 600 is exemplified by FIGs. 1 and 2.

Independent claim 70 is directed toward a third embodiment of the invention as supported by pages 6-22 of the instant specification. In summary, claim 70 is directed toward a method of using a modular control apparatus 600 comprising the steps of providing a modular control apparatus 600 having an alignment mechanism 72 for aligning the modular control apparatus 600 with a tool 11, wherein said apparatus is configured to shut off air flow to the tool 11 after a selected time that torque is being applied by the tool 11 controlled by a valve 300 in fluid communication with the tool 11 and attaching the modular control 600 apparatus to the tool 11 as exemplified in FIGs. 1A-1C. The method of varying the flow restriction of the valve 300 to control the output of the modular control apparatus and applying the tool 11 to a workpiece are exemplified in FIG. 2.

Grounds of Rejection to be Reviewed Upon Appeal.

Issue 1– Whether claims 56-61 and 70-73 are patentable under 35 U.S.C. 103(a) over USPN 2,272,598 to Mitchell et al in view of USPN 3,989,113 to Spring.

Issue 2– Whether claims 56-61 and 70-73 are patentable under 35 U.S.C. 103(a) over USPN 3,989,113 to Spring in view of USPN 4,434,858 to Whitehouse.

Grouping of Claims

For each ground of rejection which appellant contests herein which applies to more than one claim, such additional claims, to the extent separately identified and argued below, do not stand or fall together.

Argument

Prior to discussing each art rejection appearing below as Issues 1 and 2, appellant would first like to bring to the Board's attention the following specific statement made by the Patent Examiner with respect to each art rejection in the Final Office Action mailed July 12, 2006:

> "*In view of the teaching of Spring et al., it* ***would have been obvious to one skilled in the art at the time of the invention to modify*** *the valve of the pneumatic tool of Mitchell et al by forming a valve in fluid communication with the tool, and adjusting the flow*

restriction with the valve to control the output the modular control apparatus to a tool, in order to control the volume of air flow to the motor." (Emphasis added)

The Examiner further states in the Final Office Action mailed July 12, 2006:

"*In view of the teaching of Spring et al it* ***would have been obvious to one skilled in the art at the time of the invention to provide*** *the modular control apparatus of Mitchell et al with a valve in fluid communication with the tool, and adjusting the flow rate of the valve by setting the valve position to control the output the control apparatus in order to control the volume of air to the motor.*" (Emphasis added)

Furthermore, the Examiner further states in the Final Office Action mailed July 12, 2006:

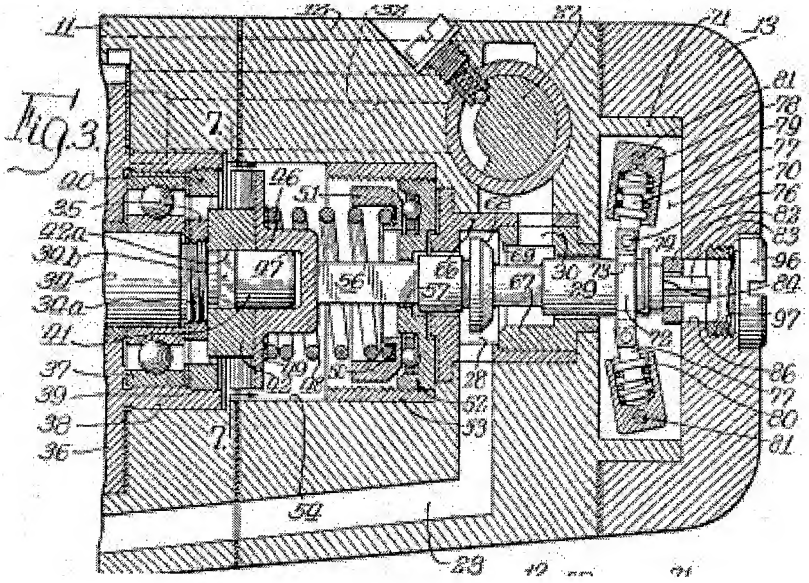
"*In view of the teaching of Whitehouse, it* ***would have been obvious to one skilled in the art at the time of the invention to modify*** *the control apparatus of the tool of Spring et al by providing the control apparatus the capability of shutting off air flow to a tool after a selected time that torque is being applied by the tool for the benefit as discussed above in Whitehouse.*" (Emphasis added)

The Examiner's obvious arguments all are based upon the rational that it would be "obvious to modify" a reference just because of the presence of the missing element in an additional art reference. The courts have discredited the "obvious to try" as an improper standard under 35 USC 103(a) to reject a claim because absent teaching of the references it is merely hindsight reasoning. Other than the presence of the element in the minor reference there is no motivation to combine the references other than an improper "obvious to try" motivation.

Issue 1– Whether claims 56-61 and 70-73 are patentable under 35 U.S.C. 103(a) over USPN 2,272,598 to Mitchell et al in view of USPN 3,989,113 to Spring.

Applicant traverses the rejection of claims 56-61 and 70-73 as improper because the rejection fails to teach each and every element of the method claims and thus fails to form a prima facie case of obviousness. The Applicant's invention of independent claims 56, 60 and 70 requires fluid communication between the modular control apparatus 600 and the tool 10, the modular control apparatus 600 controlling timing and shutoff of torque that is applied by the tool 10 where adjusting the flow restriction of a valve controls the modular control apparatus 600.

The Mitchell '598 patent does not teach, or suggest, each and every element of independent claims 56, 60 and 70 that require a **METHOD** of "**adjusting flow restriction with a valve** to control the timing and shut off of the modular control apparatus" as admitted by the Examiner.



The Mitchell '598 patent, FIG. 3 shown above, fails to disclose a modular control apparatus because it is integrated into the motor assembly and thus it is not modular as defined by the Applicant's specification. The Examiner alleges in the rejection that the '598 patent is "*providing a modular control apparatus (12), aligning, attaching and adjusting the output the modular control apparatus (see fig. 1) to a tool (11), and applying the tool to a workpiece (18,19) as shown in Figure 1 wherein the apparatus is configured to shut off air flow to a tool after a* ***selected time that torque is being applied by the tool.***" (Emphasis added) The '598 specification is completely silent regarding aligning, attaching and adjusting the modular control apparatus. Furthermore, the control apparatus of the '598 patent as shown clearly has no provisions to control the **TIME** that torque is being applied by the tool. The '598 patent teaches that its function is to provide "*a torque controlling or limiting device for application to an impact wrench comprising means controlling or stopping wrench operation in response to a sudden deceleration of said tool resulting from a predetermined increased*

resistance of said work to the driving torque upon impact." Whereas the instant invention controls BOTH the time and the torque that is applied by the tool. The '598 patent as taught can only control the peak torque caused by impact and has no control of the TIME to shutoff as it is controlled by the impact and the inertia ring 46 that are fixed constants.

Opposite from the Applicant's claimed method using fluid communication, the Mitchell '598 patent teaches a spring loaded valve in mechanical communication with the tool that is thrust closed by impact from the workpiece, not the adjustment of a flow restrictor. (See Col. 5, lines 43-65) Mitchell teaches " **by threaded adjustment** of the ring 52 the **tension of the spring 48** against the inertia ring 46 **may be varied** so as to vary the desired degree of tightness at which **the torque limiting device may become operable**" (emphasis added) See Col. 5, lines 16-20. Therefore, Mitchell **teaches away** from the Applicant's method to adjust timing and shut off **by adjusting a flow restriction** with a valve as claimed by the Applicant. The '598 patent does not suggest or disclose adjusting the **METHOD** of using a flow restriction so as to control the output of the modular apparatus, **the timing** or the shut off, but instead it teaches changing spring tension to control shut off, it is a different method for a different device than the Applicant's.

The Examiner incorrectly asserts that the "*reference of Mitchell et al **discloses all claimed subject matter but** specific teaching of a modular apparatus having a valve in fluid communication with the tool, and adjusting the flow restriction with the valve to control the output of the modular control apparatus.*" (Emphasis added) Neither the Mitchell reference nor the Examiner discusses the limitation of claims 56, 60 and 70 that shuts off after "a selected time that torque is applied" NOT a shut off of the motor at a peak torque as is only capable and taught by the Mitchell patent.

To address the above admitted deficiencies of the teaching of the Mitchell reference the Examiner cites the Spring '113 patent. The Examiner asserts that the Spring '113 patent teaches that an adjustable valve is in communication with the tool, **but** the Applicant's claims require "*adjusting the flow restriction with the valve to control the output of the modular control apparatus.*" Therefore even if the Spring '113 patent teaches a valve in communication with the tool as asserted by the Examiner it is still not the Applicant's claimed invention. The

combination fails to produce the Applicant's claimed invention that **requires** "adjusting the flow restriction of the valve to control the output of the **modular control apparatus,**" NOT to control the tool, which is the job of the modular control apparatus.

Furthermore, the Applicant's modular control apparatus controls both timing and motor shut off of the tool. The mere addition of a valve from the '113 patent to adjust the restriction of flow to the motor when combined with the teaching of the '598 patent DOES NOT control the output of the modular apparatus with NO EFFECT controlling timing and shutoff, just the peak torque of the motor.

The Spring '113 control valve teaches in column 4, line 13 that "*the control valve the body of the valve will partially cover the forward outlet port 35 leading to the forward side of the motor. Accordingly, the volume air flow from the inlet port 33 around the groove 34 will be* ***restricted*** *in passing through port 35, thus resulting in a* ***limited torque*** *being applied to the work in the forward direction.*" Thus the valve directly restricts flow to the motor and is **NOT** controlling the flow of the output of the control modulus claimed by the applicant and no control of the shut off point. The combination of the Spring '113 valve with the mechanism of the Mitchell '598 patent still fails to teach a valve in control of the OUTPUT of a modular control apparatus that would still need to rely upon the inertia ring and adjusting spring tension for adjusting shut off NOT the applicant's claimed invention.

In other words, the combination of the Mitchell and Spring references would **STILL** provide a wrench having a modular control apparatus where shutoff and timing would be controlled by the tensioning of the spring. The rejection is improper because it is a METHOD of using the applicant's control apparatus, which even if the rejection of the apparatus was proper (it is not) it works in a different manner and the applicant's method of using the control apparatus would not be useful with the apparatus produced by the cited art. The addition of a valve from the '113 patent to control the peak motor torque by restricting flow to the motor would fail to provide for a shutoff when peak torque was achieved, let alone adjusting the shut off unless the inertia ring was still present. The removal of the inertia ring prevents the tool from being shutoff after a determined torque and time, and therefore its presence is still required.

In *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984), the Federal Circuit held that it was not enough that the reference disclose all the claimed elements in isolation, but "the prior art reference must disclose each element of the claimed invention arranged as in the claim." The Spring patent may have an adjustable valve but it is not as arranged in the Applicant's claims and would not perform the claimed functions. Thus, the combination is improper because the actions of the components in the references are contrary to each other and therefore teaches away from the invention in claims 56, 60 and 70. The applicant respectfully requests reconsideration and removal of the rejection of claims 56-61 and 70-73 in view of the above deficiencies and failure to form a prime facie case of obviousness.

Issue 2– Whether claims 56-61 and 70-73 are patentable under 35 U.S.C. 103(a) over USPN 3,989,113 to Spring in view of USPN 4,434,858 to Whitehouse.

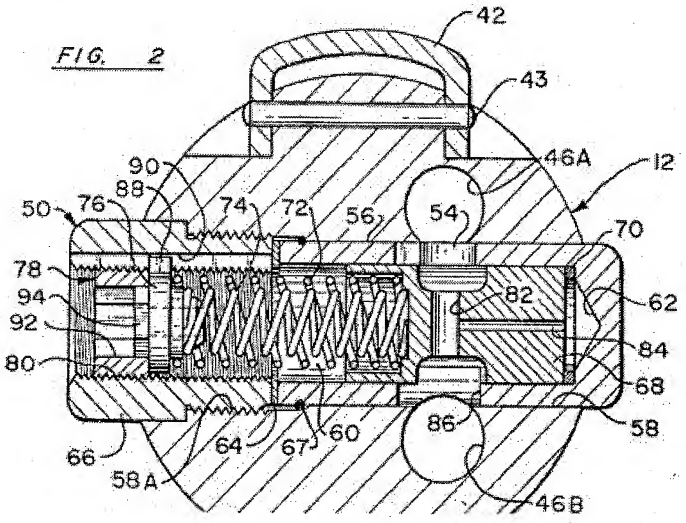
Applicant traverses the rejection of claims 56-61 and 70-73 as improper because the rejection fails to teach each and every element of the claims. The Applicant's independent claims 56, 60 and 70 each requires fluid communication between the modular control apparatus 600 and the tool 10, and for the modular control apparatus 600 to be in control of the timing and shutoff of torque that is applied by the tool 10 by adjusting the flow restriction of a valve controls the modular control apparatus 600. The combination of the Spring '113 patent and the Whitehouse '858 patent fails to form a prime facie case of obviousness by not teaching each and every element of the independent claims.

The Spring '113 patent does not teach a modular control apparatus at element (13) as alleged by the examiner, but to the contrary, the reference actually teaches at column 2, line 21 "*supported in the housing adjacent the inner face of a* ***cap or cover section 13 of the housing*** *is a motor assembly 14 of a conventional reversible rotary air driven vane type.*" As such, there is no modular control apparatus of any nature present in the Spring '113 patent except the restriction caused by the valve itself that merely limits flow to the motor. As discussed above the Examiner alleges that "*valve (27) in fluid communication with the tool (10), aligning, attaching (See Fig. 1) and adjusting the flow restriction with the valve (27) to control the output of the*

modular control (see col. 3, lines 31-43)" which is contrary to the actual operation of the devices. The Spring '113 patent at Col. 3, lines 31-43 actually teaches:

> *Adjustable means, as will now be described, is provided to reduce or adjust the effective length of the* ***control valve*** *so as to enable it to obtain a limited or less than its full forward position, in which limited position* ***a restricted volume air flow will be applied to the forward side of the motor*** *and, as a consequence, a lesser or limited torque will be applied to the work. This* ***limited or less than full torque application*** *is desired in various situations, such as when it is desired to apply a limited or less than full torque in tightening the lug bolts in automotive disc brake applications. This adjustable means includes the knob 31 and its cooperative association with the control valve 27.*

The control valve of the Spring '113 patent valve teaches DIRECT restriction of airflow to the motor thereby reducing motor torque, but not controlling the output of the **modular control apparatus required in the claims**. The Spring reference has no modular control device present to control by the valve. The Examiner implies that the adjustable valve restriction controls itself to limit the output of itself to control shutoff of the motor, which is impossible since the required elements are not taught by the reference. The '113 patent teaches just reduction of peak torque, but it does NOT prevent an over-torque condition since it is just a restriction absent any other function. The absence of the modular control apparatus does not allow for controlling of the torque or motor shut off as admitted by the examiner (pg. 6 final OA).



The Whitehouse '858 patent is combined with the Spring '113 patent to allegedly teach the feature of motor shutoff. However, the Whitehouse '858 patent reference teaches at column 4, line 54 that "*for quick and easy **adjustment of the stall pressure** and accordingly the stall torque to meet the characteristics of different applications of tool 10, **the biasing force of springs 72, 74 may be adjusted** to a desired compression setting by the above mentioned lock mechanism 78.*" (Emphasis added) The Whitehouse '858 patent again teaches the adjustment of spring tension to control the stall pressure (shutoff) of the motor. Therefore the adjustment of the restrictor valve taught by the '113 patent would have no effect on the "adjustment of the stall pressure" or shut off of the '858 patent. The Examiner has failed to consider all the required limitations of the method claim and thus have chosen elements that perform a different function in a different manner.

Applicant's independent METHOD claim 56 requires "*adjusting the flow restriction with the valve to **control the output of the modular control apparatus***." Independent claim 60 requires "*adjusting the flow rate of a valve by setting a valve position **to control** the pneumatic modular control apparatus*" where the apparatus is "*configured to shut off air flow.*" Independent claim 70 requires "*providing a **modular control apparatus** having an alignment mechanism for aligning the modular control apparatus with a tool, wherein said **apparatus is configured to shut off air flow** to the tool after a **selected time** that torque is being applied by the tool **controlled by a valve** in fluid communication with the tool*" where "*varying the flow restriction of the valve **to control** the output of the modular control apparatus.*"

Independent claims 56, 60 and 70 require the valve to be adjustable to adjust the modular control module which effects the torque and time to shut off the tool. The Examiner's cited combination of the '113 and '858 references fails to teach the aforementioned limitations because SPRING TENSION controls the point of shut off. A spring is set at a defined tension and thus it cannot be affected by the flow of a valve and thus the value would remain unchanged and therefore it could not provide the claimed invention.

In other words, the combination of the teachings of the Spring '113 patent with the Whitehouse '858 patent would provide a tool having the NON-modular control apparatus of the

'858 patent where the time and torque shutoff is adjusted ONLY by changing the spring tension. The teaching of the Spring '113 patent would place a valve between the air source and the motor to limit the air pressure to the motor to reduce torque BUT adjustment of the valve would have no effect on either the timing or the torque shut off to the tool as it would never shut off if it was below the required peak torque set by the spring.

The Court held that "*to imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.*" (See W.L. Gore & Assocs. v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). In this instance, the Applicants claims are methods of using the Applicant's control apparatus and not the invention taught by the combination suggested by the Examiner that performs a different function in a different manner from the Applicant's invention. The Examiner's rejection is the essence of improper hindsight reasoning as the claims were used as a template to select the prior art references that consists of single elements that when combined can't be used in the manner that the Applicant's claims require.

The Applicant's claimed method is not taught by the art combination as the only method of changing the shutoff is with changing the spring tension contrary to the applicant's claimed method. The failure to address the required limitations of the adjustment of the valve acting upon the control apparatus output to determine shutoff and timing thus fails to teach each and every element of the claims. The applicant respectfully request reconsideration and removal of the rejection of claims 56-61 and 70-73, which should be allowed.

Conclusion

For the extensive reasons advanced above, Appellant respectfully but forcefully contends that each and every claim is patentable. Therefore, appellant prays for reversal of all rejections, which is courteously solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any additional shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 19-0513 and please credit any excess fees to such deposit account.

Respectfully submitted,
Schmeiser Olsen & Watts

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Claims Appendix

Claims 1-55 (cancelled).

Claim 56. A method of using a modular control apparatus comprising the steps of:

providing a modular control apparatus having a valve in fluid communication with a tool, wherein said apparatus is configured to shut off air flow to the tool after a selected time that torque is being applied by the tool;

aligning the modular control apparatus to the tool;

attaching the modular control apparatus to the tool;

adjusting the flow restriction with the valve to control the output of the modular control apparatus; and

applying the tool to a workpiece.

Claim 57. The method of claim 56 further comprising the steps of:

detaching the modular apparatus from the tool;

aligning the modular control apparatus to a second tool;

attaching the modular control apparatus to the second tool;

adjusting the output of the modular control apparatus; and

applying the second tool to a workpiece.

Claim 58. The method of claim 57 wherein the step of providing a modular control apparatus comprises the step of providing a fluidic modular control apparatus.

Claim 59. The method of claim 58 wherein the step of providing a fluidic modular control apparatus comprises the step of providing an air modular control apparatus.

Claim 60. A method of using a pneumatic modular control apparatus comprising the steps of:

attaching the pneumatic modular control apparatus to a pneumatic tool, wherein said modular apparatus includes a device having a valve in fluid communication with the tool, wherein the device is configured to shut off air flow to a motor of the tool in response to a selected time that torque has been applied by the tool has been reached;

connecting a compressed-air supply channel to an input port of the pneumatic modular control apparatus;

channeling a compressed-air discharge from a discharge port of the pneumatic modular control apparatus to the inlet of a pneumatic motor of the pneumatic tool;

adjusting the flow rate of a valve by setting a valve position to control the pneumatic modular control apparatus; and

applying the pneumatic tool to the workpiece.

Claim 61. The method of claim 60, further comprising the step, prior to applying the tool to the workpiece, of attaching a workpiece adapter at least one of directly and indirectly to a drive shaft of the motor of the tool.

Claim 62. (Withdrawn) A method of making a modular control apparatus comprising the steps of:

forming a first sub-block to create a reservoir, a valve chamber, and a plurality of channels;

forming a second sub-block to create a flow channel having a valve seat for a needle valve, the channel sized and positioned to fluidically connect, when mated with the first sub-block, the reservoir to the channel in the first block that receives the input of the compressible fluid;

forming a valve stem channel in the second sub-block, the valve stem channel suitable to

receive the stem of a needle valve, the channel sized and positioned to align the needle with a valve seat;

forming a valve body;

forming a needle valve body;

installing the valve body into the valve chamber;

installing the needle valve in the needle valve seat of the second sub-block;

mating and releasably fastening the first and second sub-blocks together;

forming alignment features; and

at least one of forming and installing at least one attachment mechanism.

Claim 63. (Withdrawn) The method of claim 62 wherein installing the valve body comprises:

installing a seal;

inserting the valve body;

installing the bias mechanism; and

installing an o-ring bumper.

Claim 64. (Withdrawn) A method of making a pneumatic power impact tool adapted to receive a pneumatic modular control apparatus, the apparatus having an input port and a discharge port, the method comprising:

providing a pneumatic power impact tool having a handle, a trigger valve for controlling the input supply of compressed air, and an air motor having an inlet for compressed air;

forming a channel from the output of the trigger valve to a trigger valve outlet port configured to align and connect with the input port of the pneumatic modular control apparatus;

forming a channel from the inlet of the air motor to an air motor supply port configured to align and connect with the discharge port of the pneumatic modular control apparatus; and

forming a housing, said housing covering the air motor, channels, and the trigger valve, said housing also comprising the air motor supply port, the trigger valve outlet port, alignment mechanisms, and connection mechanisms.

Claims 65-66 (Cancelled)

Claim 67. (Withdrawn) A method of making an apparatus for a power impact tool comprising:

providing an air motor within a housing, the housing and air motor adapted to receive a modular control apparatus; and

attaching a modular control apparatus.

Claims 68-69. (Cancelled)

Claim 70. A method of using a modular control apparatus comprising the steps of:

providing a modular control apparatus having an alignment mechanism for aligning the modular control apparatus with a tool, wherein said apparatus is configured to shut off air flow to the tool after a selected time that torque is being applied by the tool controlled by a valve in fluid communication with the tool;

attaching the modular control apparatus to the tool;

varying the flow restriction of the valve to control the output of the modular control apparatus; and

applying the tool to a workpiece.

Claim 71. The method of claim 70 further comprising the step of:

providing an adapter; and

attaching the adapter to the tool.

Claim 72. The method of claim 70 further comprising the steps of:

detaching the modular apparatus from the tool;

attaching the modular control apparatus to a second tool;

adjusting the output of the modular control apparatus; and

applying the second tool to a workpiece.

Claim 73. The method of claim 72 wherein the step of providing a modular control apparatus comprises the step of providing a fluidic modular control apparatus.

Evidence Appendix

None.

Related Proceedings Appendix

None.